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EXAMINER BOYLE, ROBERT C				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/541,996

Applicant(s)

NAKAGAWA ET AL.

Examiner

ROBERT C. BOYLE

Art Unit

1796

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 57-85 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 57-85 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date 10/15/2007, 11/13/2006, 7/13/2005
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, claims 32-56, in the reply filed on April 17, 2009 is acknowledged.
2. It is noted that Applicant states that new claims 57-85 are drawn to the elected invention and the claims in the originally elected group have been cancelled. It is the Examiner's position that this is not the case. While claims 57-82 are directed to a two component curable composition, the second component is an amine, which is patentably distinct from the two component curable composition of claims 32-56, in which the second component was a compound having a methyl ester group.
3. Nevertheless, upon reconsideration of the scope of newly submitted claims vis-à-vis the elected and now canceled claims as well as for the sake of compact prosecution, an Action on the merits of the new claims, 57-85, is presented below.

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422

F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 57-61, 63-69, 71-74 and 78-85 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-9 of U.S.

Patent No. 7,388,038. Although the conflicting claims are not identical, they are not patentably distinct from each other because Patent '038 claims a 'photocurable substance' which corresponds to the compound (II) of the instant claims and while Patent '038 does not recite the use of an amine compound in the claims, Patent '038 claims a curable composition, and describes curing catalysts that include amine compounds (column 24, line 37-column 26, line 15). Case law holds that those portions of the specification which provide support for the patent claims may also be examined and considered when addressing the issue of whether a claim in an application defines an obvious variation of an invention claimed in the patent. *In re Vogel*, 422 F.2d 438, 164 USPQ 619,622 (CCPA 1970). Therefore, it would have been obvious to one of ordinary skill in the art to use the curable composition like presently claimed in the instant application as claimed by Patent 7,388,038.

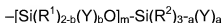
Claims 57-61, 63-69, 71-74 and 78-85 are directed to an invention not patentably distinct from claims 1-9 of commonly assigned Patent 7,388,038. Specifically, see above discussion.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned 7,388,038, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

Claim Objections

6. Claim 57 is objected to because of the following informalities: apparent typos exist in general formula (1). The appropriate notation for representing a silicon atom is "Si" as opposed to "SI" which represents a sulfur atom next to an iodine atom. Further, the specification recites the subscript "2-b" for R1 as opposed to "2-0" and the subscript "3-a" for R2 as opposed to "3 0". It is believed that these are apparent typos, and the general formula (1), as found in paragraph [0055] of the instant specification, is actually:



7. The general formula as recited above will be examined in this Office Action.

Appropriate correction is required.

International Search Report

8. The International Search Report ("ISR") for PCT/JP04/00356, of which the instant application is a National Stage entry of, presents seven documents that are of particular relevance. Five of these documents are assigned to the Kaneka Corporation just as the prior art used below, and have substantial overlap with the prior art used below. JP 10-120724 and JP 09-143329 appear relevant because both teach silyl containing vinyl polymers and amine compositions, but have not been used in the rejections below because the prior art used below adequately sets forth basis for rejection of the claims.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 57-58, 66, 70 and 77-78 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

11. Claims 57-58, 66, and 78 all use the phrase "essential component" or "essential components". Because the term "essential" is not defined by the specification or claims, the use of the term "essential" makes the scope of the claim unclear because the

necessity of any further components not possessing the "essential" description is put into question.

12. Claim 70 recites "wherein the carbon atom at the *a*-position of the methyl ester group...is primary or secondary." This is unclear because as drafted, it appears that the carbon atom referred to is adjacent to the methyl group that is part of the ester, which would make the ester an ethyl ester. This is opposed to the carbon atom that is adjacent to the carbonyl of the ester, which is able to be a primary or secondary carbon atom.

13. Claim 77 recites that the curable composition is a one-component curable composition. However, claim 77 depends from claim 57, which recites that the curable composition comprises two components.

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

15. Claims 57-70, 76-82, and 83-85 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujita et al. (WO 00/20498). As the cited WO publication is in a non-

English language, the English equivalent, US 2004/0029990 ("Fujita"), has been utilized in place of WO '498. All column and line number citations are made with respect to the above mentioned U.S. document.

16. As to claims 57-61, 67-68, Fujita teaches a curable composition containing two components (A) a vinyl polymer, made with monomers such as methyl methacrylate or methyl acrylate, where the polymer has at least one crosslinking silyl group of the formula (1) at the terminus of the chain and (B) a curing catalyst which includes amines (abstract; ¶ 16-29, 37-39, 121-123, 227-228).

17. Claim 62 recites a property of the claimed polymers, being at a liquid state at 23°C; and Fujita teaches the same polymers as currently claimed. It is therefore inherent that the polymers of Fujita are liquid at 23°C since such a property is evidently dependent on the nature of the composition used. Case law holds that a material and its properties are inseparable. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

18. As to claims 63-64, Fujita teaches forming the polymer by living radical polymerization and atom transfer polymerization (¶ 41-111).

19. As to claim 65, Fujita teaches the Mw/Mn of less than 1.8 (¶ 38).

20. As to claim 66, Fujita teaches that a photocurable substance such as methacrylic esters polymers can be added to the composition (¶ 16-29, 216-225).

21. As to claims 69-70, Fujita teaches acrylate and methacrylate monomers may be the photocurable substance including methyl acrylate (¶ 16-29, 216-218).

22. As to claims 78-80, Fujita teaches using a condensation curing catalyst such as dibutyl tin dilaurate or butyl amine (§ 227-233).

23. As to claim 81, Fujita teaches amino coupling agents such as aminopropyltrimethoxysilane (§ 227-233).

24. As to claims 83-85, Fujita teaches the gaskets, sealants and adhesives formed from the curable compositions (§ 252-254).

25. Claim 57-61, 63-69, 71-74 and 78-85 are rejected under 35 U.S.C. 102(e) as being anticipated by Fujita et al., (US 7,388,038) ("Patent '038").

26. The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

27. As to claims 57-61, 67-68, Patent '038 teaches a curable composition containing two components (A) a vinyl polymer, made with monomers such as methyl methacrylate or methyl acrylate, where the polymer has at least one crosslinking silyl group of the formula (1) at the terminus of the chain and (B) a curing catalyst which includes amines (abstract; column 3, line 62-column 4, line 47; column 5, lines 1-55; column 15, line 20-column 16, line 26; column 25, line 44-column 26, line 60).

28. Claim 62 recites a property of the claimed polymers, being at a liquid state at 23°C; and Patent '038 teaches the same polymers as currently claimed. It is therefore inherent that the polymers of Patent '038 are liquid at 23°C since such a property is evidently dependent on the nature of the composition used. Case law holds that a material and its properties are inseparable. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).
29. As to claims 63-64, Patent '038 teaches forming the polymer by living radical polymerization and atom transfer polymerization (column 6, line 14-column 9, line 17).
30. As to claim 65, Patent '038 teaches the Mw/Mn of less than 1.8 (column 5, lines 56-67).
31. As to claim 66, Patent '038 teaches that a photocurable substance such as methacrylic esters polymers can be added to the composition (column 3, line 62-column 4, line 47; column 24, line 38-column 25, line 42).
32. As to claims 69-70, Patent '038 teaches acrylate and methacrylate monomers may be the photocurable substance including methyl acrylate (column 3, line 62-column 4, line 47; column 24, line 38-column 25, line 42).
33. As to claims 78-80, Patent '038 teaches using a condensation curing catalyst such as dibutyl tin dilaurate or butyl amine (column 25, lines 44-65).
34. As to claim 81, Patent '038 teaches amino coupling agents such as aminopropyltrimethoxysilane (column 26, line 63-column 27, line 61).
35. As to claims 83-85, Patent '038 teaches the gaskets, sealants and adhesives formed from the curable compositions (column 29, lines 40-52).

Claim Rejections - 35 USC § 103

36. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

37. Claims 71-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita. The discussion with respect to Fujita as set forth in paragraphs 15-24 above is incorporated here by reference.

38. As to claims 71-72, Fujita teaches a curable composition containing two components (A) a vinyl polymer, made with monomers such as methyl methacrylate or methyl acrylate, where the polymer has at least one crosslinking silyl group of the formula (1) at the terminus of the chain and (B) a curing catalyst which includes amines (abstract; ¶¶ 16-29, 37-39, 121-123, 227-228). Fujita does not teach using dimethyl esters of dicarboxylic acids.

39. However, Fujita teaches that plasticizers such as butyl oleate, dioctyl adipate, isodecyl succinate, dioctyl sebacate, and dibutyl sebacate can be added (¶ 242). While the esters and diesters are not methyl esters, it is the examiner's position that it would have been obvious to one of ordinary skill in the art to expect similar beneficial results with compounds having only additional $-\text{CH}_2-$ groups. Case laws holds that homologs (compounds differing regularly by the successive addition of the same chemical group,

e.g., by $-\text{CH}_2-$ groups) are generally of sufficiently close structural similarity that there is a presumed expectation that such compounds possess similar properties. *In re Wilder*, 563 F.2d 457, 195 USPQ 426 (CCPA 1977). Therefore, using the methyl derivatives of the above diesters would have been obvious.

40. Claim 82 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita in view of Inoue et al. (US 6,255,392). The discussion with respect to Fujita as set forth in paragraphs 37-39 above is incorporated here by reference.

41. As to claims 73-74, Fujita teaches a curable composition containing two components (A) a vinyl polymer, made with monomers such as methyl methacrylate or methyl acrylate, where the polymer has at least one crosslinking silyl group of the formula (1) at the terminus of the chain and (B) a curing catalyst which includes amines (abstract; ¶¶ 16-29, 37-39, 121-123, 227-228). Fujita does not teach adding a second polymer.

42. Inoue teaches the addition of a vinyl polymer containing (A) a hydrolysable silyl group added to (B) a compound containing no silyl groups, where (B) may be vinyl copolymers with 7-50 wt% hydroxyl containing monomer and the remainder is a second monomer, which includes methyl methacrylate and the ester of acrylic acid which are added to a curing component such as amines (abstract; column 2, lines 20-61; column 10, line 60-column 12, line 31; column 17, line 25-column 18, line 17). It would have been obvious to add the second polymer as taught by Inoue with the curable composition of Fujita because using the polymers of Inoue increases the durability of

the cured composition and adds to acid resistance and weatherability (Inoue: column 1, lines 40-49; column 20, lines 1-8)

43. As to claim 75, Inoue teaches a polymer which has less than 80 wt% of vinyl ester monomers with more than 4 carbon atoms (column 23, line 62-column 25, line 39; Table 3).

44. As to claim 76, Inoue teaches a polymer which has less than 400% molar ratio of esters with 2-4 carbon atoms to methyl esters (column 23, line 62-column 25, line 39; Table 3).

45. Claim 82 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita in view of Ueda et al. (US 5,910,555). The discussion with respect to Fujita as set forth in paragraphs 37-44 above is incorporated here by reference.

46. As to claim 82, Fujuta teaches a curable composition containing two components (A) a vinyl polymer, made with monomers such as methyl methacrylate or methyl acrylate, where the polymer has at least one crosslinking silyl group of the formula (1) at the terminus of the chain and (B) a curing catalyst which includes amines (abstract; ¶¶ 16-29, 37-39, 121-123, 227-228). Fujita does not teach the second component is a polyether with the silyl group of formula (1).

47. Ueda teaches a curable resin composition containing (A) an oxyalkylene polymer with a silyl reactive group according to formula (1) with (B) an amino group containing compound that can be used with a silyl containing methyl acrylate polymer (abstract; column 1, line 62-column 2, line 67; column 4, lines 24-62; column 5, lines 6-23).

48. It would have been obvious to use the oxyalkylene polymer of Ueda with the curable composition of Fujita because both teach curable compositions containing crosslinking silyl groups used in sealants and adhesives (Ueda: column 8, lines 64-67) and the oxyalkylene polymers give little or no residual tack with excellent adhesion (column 1, line 55-column 2, line 13) and Fujuta teaches using solid-state modifiers such as alkylalkoxysilanes and plasticizers such as polyethers (Fujuta: ¶¶ 242,245).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT C. BOYLE whose telephone number is (571)270-7347. The examiner can normally be reached on Monday-Friday, 9:00AM-5:00PM Eastern.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. C. B./
Examiner, Art Unit 1796

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1796

